

Office Action Summary

Application No.

10/564,108

Applicant(s)

RAZAVI ET AL.

Examiner

RIP A. LEE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/55/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 22, 25, and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed feature that 3/6-substituents are necessarily less bulky than the distal Cp substituent does not appear in the instant disclosure, and such a limitation is not described in foreign priority document, EP Application 03102060.5.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claims 17-29 are rejected under 35 U.S.C. 102(e) as being anticipated or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gauthier *et al.* (U.S. 6,855,783).

The prior art of Gauthier *et al.* relates to polymerization of olefins in the presence of a catalyst comprising metallocenes of formula (3). Distal substituent R_a on the cyclopentadienyl ligand is *t*-butyl, phenyldimethyl [*sic*], or triphenyl [*sic*]. Fluorenyl substituents R' are isobutyl, phenyldimethyl [*sic*], or triphenylmethyl (col. 4, lines 60-65). An isobutyl on Cp' (fluorenyl) is less bulky than a triphenylmethyl group on Cp. Catalysts are used to prepare polypropylene or propylene-ethylene copolymer (col. 5, lines 20-26). Homopolymerization is carried out in liquid propylene, in which case, the concentration of at least one olefin monomer is less than 3 mole/L, which includes zero. The reference does not show the concentration of ethylene in liquid propylene for copolymerization reactions, however, a reasonable basis exists to believe that the process of Gauthier *et al.* uses the claimed concentration, especially in view of the fact that the concentration is limited by solubility of ethylene and in light of the fact that co-monomer incorporation is at most 10 wt % (col. 5, line 26). Since the PTO can not conduct experiments, the burden of proof is shifted to the Applicants to establish an unobviousness difference. *In re Fitzgerald*, 619 F.2d. 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112-2112.02. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Gauthier *et al.* does not provide analysis of the presence of unsaturation in the resulting polymer, however, one of ordinary skill in the art would reasonably expect substantially the same processes to produce substantially the same product. Again, the burden of proof is shifted to Applicant to establish any unobviousness differences.

6. Claims 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gauthier *et al.* in view of Charlier (U.S. 6,632,854).

Gauthier *et al.* does not disclose post-processing of polymers. Charlier teaches post-processing treatment by irradiation of polymer in order to effect formation of long chain branching (col. 1, line 25). Additionally, polymer may be subjected to irradiation in the presence of a grafting agent such as tetravinyl silane in order to effect crosslinking (col. 4, line 16). In another embodiment, the polymer may be grafted with a polar compound such as (meth)acrylate

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or α,β -unsaturated acid, or its anhydride (claim 11). One having ordinary skill in the art gleans from the disclosure of Charlier that modified polymers have improved mechanical properties (col. 8, line 15), and introduction of functional groups allows polymers to be used for useful products. It would have been obvious to one having ordinary skill in the art to make an improved and useful polymer product by reactive grafting taught in Charlier, and since the post-processing shown in Charlier is general, one of ordinary skill in the art would have reasonably expected to produce a useful, derivatized polymer of Gauthier *et al.* The skilled artisan also would have found it obvious to carry out post-processing in a reaction zone other than that used for polymerization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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February 3, 2008